

Project Data Summary Sheet²²⁰

Project Number	SEA 4000 Phase 3
Project Name	AIR WARFARE DESTROYER
First Year Reported in the MPR	2008-09
Capability Type	New
Acquisition Type	Australianised MOTS
Service	Royal Australian Navy
Government 1st Pass Approval	May 05
Government 2nd Pass Approval	Jun 07
Total Approved Budget (Current)	\$7,891.1m
2014-15 Budget	\$763.2m
Project Stage	Detailed Design Review
Complexity	ACAT I



Section 1 – Project Summary

1.1 Project Description

This project will acquire three *Hobart* Class Air Warfare Destroyers (AWD) and their support system for the Australian Defence Force (ADF). The capability provided by the AWDs will form a critical element of the ADF's joint air warfare defence capability and will contribute to a number of other joint warfare outcomes.

1.2 Current Status

On 4 June 2014 the Minister for Defence announced this project as a Project of Concern.

Cost Performance

In-year

The AWD Program Financial Year 2014-15 Budget was underspent by \$29m. Approximately \$20m was a result of delays against the Platform System Design (PSD) Contract due to schedule slippage of Ship 1 and Navantia's involvement in the AWD Reform. Other delays occurred against various Program Management Office (PMO) contracts including \$4.5m of Spares expenditure. The other significant variation was in the Harpoon FMS case where payments of USD \$9m have been reprogrammed to Financial Year 2015-16. Implementation of AWD Reform announced in 2014 will require rebaselining both program cost and schedule. The Production Comprehensive Cost Review (CCR) was held in February 2015.

Project Financial Assurance Statement

Notwithstanding the issues disclosed at Section 5.2, as at 30 June 2015, SEA 4000 Phase 3 has reviewed the approved scope and budget for those elements required to be delivered by the program. Having reviewed the current financial and contractual obligations of the program, current known risks and estimated future expenditure, Defence considers, as at the reporting date, **and following the Comprehensive Cost Review, consideration of the budget remaining for the project to complete against the agreed scope**

220 Notice to reader

Future dates and Sections: 1.3 (Major Risks and Issues), 4.1 (Measures of Materiel Capability Delivery Performance), 5.1 (Major Project Risks) and 5.2 (Major Project Issues) are out of scope for the ANAO's review of this Project Data Summary Sheet. Information on the scope of the review is provided in the *Independent Review Report by the Auditor-General* in Part 3 of this report.

is required. This was indicated in the 22 May 2015 joint media release by the Minister for Finance and the Minister for Defence, which suggested that the project will require an additional \$1.2 billion to be completed.

Contingency Statement

The project has applied contingency in the financial year primarily for the **offset of indexation funding shortfall and ABTIA Contract Amendment Proposal (CAP) 102 Counter Measure Lockers – the integration of the Magazine locker with the fire main system.**

Schedule Performance

On 6 September 2012, following a stakeholder review of resource considerations and support for a schedule extension, the then Minister for Defence announced that the AWD schedule would be re-baselined and revised AWD delivery dates would be:

- HMAS *Hobart* (Ship 1) – March 2016;
- HMAS *Brisbane* (Ship 2) – September 2017; and
- HMAS *Sydney* (Ship 3) – March 2019.

At this time the new delivery dates represented delays of 15, 18 and 21 months respectively against the dates contracted in October 2007.

In addition, following further concerns with AWD delivery, Operational Schedule dates have been determined based on the outcomes of a Comprehensive Cost Review (CCR) held in February 2015. Movements of 15, 12 and 12 months respective to each ship's Provisional Acceptance date were identified by the Industry Participants. It is intended that the revised dates be re-baselined over the June-September 2015 period and subsequently validated through a tailored Integrated Baseline Review. The contractual implications in relation to schedule and cost of the CCR indicated schedule movements have yet to be negotiated. These matters are under review as part of the AWD Reform activities.

Since July 2014 the following major events have occurred:

- **September 2014 – Hull mounted sonar installed to the hull of Ship 1;**
- **September 2014 – Portside propeller blades loaded to Ship 1;**
- **October 2014 – Mast for Ship 3 delivered;**
- **December 2014 – SPY-1D(V) radar array faces for Aegis combat system for Ship 1 installed;**
- **February 2015 – One block delivered by road from Forgacs to Adelaide;**
- **February 2015 – Comprehensive Cost Review for the AWD Alliance Production activities;**
- **March 2015 – Four blocks from Forgacs delivered by barge to Adelaide; and**
- **May 2015 – Hobart Launch (Ship 1).**

Materiel Capability Delivery Performance

All significant government specified capability is currently planned to be achieved and in some warfare areas, the capability will be exceeded. **Procurement of the Electronic Warfare Radar – Electronic Attack (R-EA) sub-system procurement has been deferred as its performance based on currently available technology does not represent a cost-capability benefit given that more capable second generation technology is expected to be available in the 2017-18 time frame. The R-EA budget has been preserved to support the more capable system being installed in the AWD.** Decisions made by the program in conjunction with the Capability Manager will ensure that AWD is delivered with the expected capability.

Note

The capability assessments and forecasts by the program are not subject to the ANAO's assurance review.

1.3 Project Context

Background

In May 2005 the Government granted first pass approval to the Program, allowing commencement of Phase 2, the Design phase.

Phase 2 oversaw the development of two platform designs:

- The 'Existing' design based upon a modified version of the Navantia designed and built F-100 warship as the Australianised military off-the-shelf option; and
- The 'Evolved' design produced by Gibbs & Cox developed from an in-house design utilising design features of the US Navy class of Aegis Guided Missile Destroyers.

In May 2005, the Government selected ASC AWD Shipbuilder Pty Ltd as the shipbuilder for the AWD Program and determined that the ships should be built in Adelaide. Raytheon Australia Pty Ltd was chosen as the Combat System Systems Engineer.

In October 2005, Defence sought and received Government approval to acquire three Aegis Weapon Systems to provide the core air warfare capability of the AWD. The Commonwealth subsequently entered into a United States (US) Foreign Military Sales (FMS) agreement for the acquisition of the Aegis weapons system comprising:

- Three Aegis Weapon System sets; and
- Associated engineering services and integrated logistic support.

In June 2007, at Second Pass, the Government granted approval to commence construction of the *Hobart* Class AWD utilising the existing design. This decision initiated the current phase of Project SEA 4000 Phase 3, the construction phase.

Phase 3 includes detailed design, procurement, ship construction, and set to work of the Aegis Combat System and the F-100 based Platform Systems. This culminates in the delivery of three *Hobart* Class AWDs together with the ships support systems including initial spares and ammunition outfits, and initial crew training.

Phase 3 concludes with the delivery to the **Royal Australian Navy** (RAN) of the third AWD, HMAS *Sydney*.

At Second Pass, the Government approved Defence's proposal to close SEA 4000 Program Phase 2, Design, and Phase 3.1, Aegis acquisition activities, and combine the remaining Phase 2 and Phase 3.1 scope and funding with SEA 4000 Program Phase 3.

The Government announced the implementation of an AWD Reform Strategy on 4 June 2014 following an Independent Review of the AWD Program and heightened concern regarding program schedule and forecast cost increases. These concerns resulted in the Program being designated a Project of Concern in June 2014.

The objectives of the Reform strategy are to:

- **Improve shipbuilding productivity at the AWD shipbuilder ASC and its subcontractors BAE Systems, Forgacs and Navantia;**
- **Include the urgent insertion of an experienced shipbuilding management team into ASC; and**
- **After augmented shipbuilding capacity has been put in place, pursue the reallocation of blocks between shipyards to make the AWD program more sustainable.**

The AWD Alliance announced the award of a contract to BAE Systems on 23 October 2014 for the construction of an additional three Guided Missile Destroyer (DDG) blocks at its Williamstown Shipyard.

On 22 May 2015, the Minister for Finance and the then Minister for Defence jointly released a media statement. The statement suggested that the project will require an additional \$1.2 billion to be completed and that this would be funded at the expense of other Defence acquisitions.

A limited tender process was initiated on 29 May 2015 seeking proposals to either insert a managing contractor into ASC for the remainder of the AWD build, or to further enhance ASC capability through a partnering agreement.

Uniqueness

The SEA 4000 Air Warfare Destroyer Program is currently one of Australia's largest and most technically complex Defence projects.

The AWDs have been designated by the RAN as *Hobart* Class DDGs and will be the RAN's first Aegis capable ships.

The AWDs are being delivered through an Alliance based contract arrangement involving ASC AWD Shipbuilder, Raytheon Australia, and the Commonwealth, represented by **CASG**.

Contractual Framework

The Alliance based contract arrangement was signed in October 2007. Key features of the AWD Alliance and the operations of the Alliance based contract arrangement include:

- The Alliance Industry Participants (Raytheon Australia and ASC AWD Shipbuilder) are jointly and severally responsible for the delivery of the three ships and their support systems. Each party remains individually responsible for compliance with all statutory requirements.
- The Alliance is neither a legal body, nor a joint venture.
- The legal and commercial basis for the Alliance is established through the Alliance Based Target Incentive Agreement (ABTIA) contract signed by all three participants. This establishes a virtual organisation under the governance of the AWD Alliance Board.
- All participants have a shared commercial interest in the outcome of the Program through pain share/gain share arrangements. The Industry Participants fee is at risk if performance is poor, however, they can benefit from delivery ahead of schedule and/or under budget.

The Commonwealth entered into a Platform System Design contract with Navantia, the ship designer, in October 2007. This contract is managed by the AWD Alliance under the Alliance based contract arrangement.

The Aegis combat system is being procured by the Commonwealth under the FMS agreement with the US Navy. This agreement is also managed within the AWD Alliance project team.

While Navantia and the US Navy (and its equipment supplier, Lockheed Martin) are not part of the Alliance, they work closely with the Alliance and are treated in an alliance like manner.

Major Risks and Issues

The major challenges the project faces are:

- **Integration of the Hobart Class Combat System;**
- **Capability Acceptance;**
- Achieving maximum productivity levels through efficient shipyard operation and change management;
- Managing the level and timing of changes to the production baseline to minimise production rework;
- Meeting the consolidation, test and activation schedules within the constraints of a new build in a new Australian shipyard;
- Managing the timely delivery of equipment and fittings from a large number of subcontractors located in Australia and overseas through the AWD Alliance;
- Delivering an effective, efficient and sustainable through-life support system for the *Hobart* Class DDGs;
- Sufficiency of the project budget to fund actual cost increases; **and**
- **Impacts to Test and Activation and Sea Trials due to equipment failure.**

Other Current Sub-Projects

SEA 4000 Phase 3.2 – Standard Missile SM-2 Missile conversion and upgrade. The conversion of the missiles will allow them to be used in the AWDs and provide an enhanced anti-aircraft and anti-ship missile defence capability. **This project is managed by Helicopter, Tactical, Unmanned Ariel Systems and Guided Weapons Division.**

Section 2 – Financial Performance

2.1 Project Budget (out-turned) and Expenditure History

Date	Description	\$m	Notes
Project Budget			
Jun 07	Original Approved	7,207.4	
Jan 14	Real Variation - Transfer	(109.9)	1
		(109.9)	
Jul 10	Price Indexation	1,173.2	2
Jun 15	Exchange Variation	(379.6)	
Jun 15	Total Budget	\$7,891.1	
Project Expenditure			
Prior to Jul 14	Contract Expenditure – AWD Alliance	(3,597.7)	
	Contract Expenditure – US Government	(974.1)	
	Contract Expenditure – Navantia	(397.4)	
	Contract Expenditure – NATO Consortium	(72.4)	
	Other Contract Payments / Internal Expenses	(182.6)	3
		(5,224.2)	
FY to Jun 15	Contract Expenditure – AWD Alliance	(668.7)	
	Contract Expenditure – US Government	(21.5)	
	Contract Expenditure – Navantia	(16.0)	
	Other Contract Payments / Internal Expenses	(28.0)	3
		(734.2)	
Jun 15	Total Expenditure	(5958.4)	
Jun 15	Remaining Budget	1932.7	
Notes			
1	In January 2014, a real cost decrease was approved to transfer project funds to Defence Support and Reform Group (DSRG) which has responsibility for AWD facilities related deliverables.		
2	Up until July 2010, indexation was applied to project budgets on a periodic basis. The cumulative impact of this approach was \$854.8m. In addition to this amount, the impact on the project budget as a result of out-turning was a further \$318.4m having been applied to the remaining life of the project.		
3	Other expenditure comprises: Operating expenditure, minor contract expenditure and other capital expenditure not attributable to the listed contracts.		

2.2A In-year Budget Estimate Variance

Estimate PBS \$m	Estimate PAES \$m	Estimate Final Plan \$m	Explanation of Material Movements
615.6	759.3	763.2	PBS-PAES: The variation reflects the current challenges of the program resulting from increases associated with shipbuilding activities and cost over-runs. PAES Final Plan: Variance based on movements in foreign exchange.
Variance \$m	143.7	3.9	Total Variance (\$m): 147.6
Variance %	23.3	0.5	Total Variance (%): 23.8

2.2B In-year Budget/Expenditure Variance

Estimate Final Plan \$m	Actual \$m	Variance \$m	Variance Factor	Explanation
		(6.8)	FMS	The AWD Program Financial Year 2014-15 Budget was underspent by \$29m. Approximately \$20m was a result of delays against the PSD Contract due to schedule slippage of Ship 1 and Navantia's involvement in the AWD Reform. Other delays occurred against various PMO contracts including \$4.5m of Spares expenditure. The other significant variation was in the Harpoon GMS case where payments of USD \$9m have been reprogrammed to Financial Year 2015-16.
		(19.6)	Overseas Industry	
		8.0	Local Industry	
			Brought Forward	
			Cost Savings	
			FOREX Variation	
		(10.6)	Commonwealth Delays	
			Additional Government Approvals	
763.2	734.2	(29.0)	Total Variance	
		(3.8)	% Variance	

2.3 Details of Project Major Contracts

Contractor	Signature Date	Price at		Type (Price Basis)	Form of Contract	Notes
		Signature \$m	30 Jun 15 \$m			
US Government	Oct 05	842.7	1,071.7	FMS	FMS	1, 2
AWD Alliance	Oct 07	4,323.1	5,350.3	Variable with Pain/Gain Share	Alliance	3
Navantia	Oct 07	373.6	449.0	Fixed with indices escalation	Alliance based	2
NATO Consortium	Dec 09	78.5	72.4	FMS (NATO)	FMS (NATO)	2

Notes				
1	<p>The FMS Case established pre-Second Pass involved three contractual steps (initial version and two amendments); October 2005 for initial engineering services, April 2006 for long lead items and July 2006 for three ship sets of core Aegis Combat System Equipment. The resulting scope was in accordance with Government approval of SEA 4000 Phase 3.1. Post-Second Pass, there have been three further amendments to the FMS Case for additional equipment and services for both the AWD Program and the AWD Alliance. These amendments are in accordance with Government approval at Second Pass for the full scope of SEA 4000 Phase 3. There will be further amendments to the FMS Case to cover additional equipment and services for the project. The Price at Signature excludes \$171m spent in previous phases of the project.</p> <p>The Price at 30 June 2015 excludes a current Alliance cost of \$208.2m for the purchase of FMS equipment to be supplied under the ABTIA contract.</p>			
2	Contract value as at 30 June 2015 is based on actual expenditure to 30 June 2015 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).			
3	The variance in value is due to actual and estimated over expenditure in the total cost estimate. Contract value as at 30 June 2015 is based on actual expenditure to 30 June 2015 and remaining commitment at current exchange rates, and includes adjustments for indexation (where applicable).			
Contractor	Quantities as at		Scope	Notes
	Signature	30 Jun 15		
US Government	3	3	Aegis Combat System	
AWD Alliance	3	3	Air Warfare Destroyer	
Navantia	N/A	N/A	Platform System Design and Services	
NATO Consortium	Classified	Classified	ESSM Missiles	1
Major equipment received and quantities to 30 Jun 15				
Block production is underway at all four shipyards. See Section 1.2 Schedule Performance for further detail.				
Notes				
1	Quantity being acquired is classified.			

Section 3 – Schedule Performance

3.1 Design Review Progress

Review	Major System /Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Requirements	AWD Program	Mar 08	N/A	Apr 08	1	
Preliminary Design	AWD Program	Dec 08	N/A	Feb 09	0	1
Critical Design	AWD Program	Dec 09	N/A	Feb 10	0	2
Support System Detailed Design Review	AWD Program	Jun 10	N/A	Aug 10	0	3
Notes						
1	The Preliminary Design Review (PDR) was conducted as scheduled in December 2008 and resulting actions completed as scheduled by February 2009.					
2	The Critical Design Review (CDR) was conducted as scheduled in December 2009 and resulting actions completed as scheduled by February 2010.					
3	The Support System Detailed Design Review (SSDDR) was conducted as scheduled in June 2010 and resulting actions completed August 2010.					

3.2 Contractor Test and Evaluation Progress

Test and Evaluation	Major System / Platform Variant	Original Planned	Current Planned	Achieved /Forecast	Variance (Months)	Notes
System Integration	Ship 1 – Complete Hull Integration	Dec 12	Mar 14	Mar 14	15	1, 3
	Ship 1 – Start Combat System Light Off	Dec 13	Nov 15	Nov 15	23	2, 3, 4
	Ship 2 – Complete Hull Integration	Mar 14	Dec 15	Dec 15	21	3, 4
	Ship 2 – Start Combat System Light Off	Mar 15	Apr 17	Apr 17	25	3, 4
	Ship 3 – Complete Hull Integration	Jun 15	Aug 17	Aug 17	26	3, 4
	Ship 3 – Start Combat System Light Off	Jun 16	Sep 18	Sep 18	27	3, 4
Acceptance	Ship 1 – Commencement of Category 5 Trials	Aug 14	Sep 16	Sep 16	25	3, 4
	Ship 1 – Provisional Acceptance (Initial Materiel Release)	Dec 14	Jun 17	Jun 17	30	3, 4
	Ship 2 – Commencement of Category 5 Trials	Nov 15	Dec 17	Dec 17	25	3, 4
	Ship 2 – Provisional Acceptance (Materiel Release 2)	Mar 16	Sep 18	Sep 18	30	3, 4
	Ship 3 – Commencement of Category 5 Trials	Feb 17	Jun 19	Jun 19	28	3, 4
	Ship 3 – Provisional Acceptance (Materiel Release 3)	Jun 17	Mar 20	Mar 20	33	3, 4
Notes						
1	Complete Hull Integration was achieved when the last erection joint was completed and has been structurally inspected and accepted.					
2	Start Combat System Light Off verifies the readiness of the first set of installed combat system equipment for CAT 4 testing.					
3	In 2010 difficulties were encountered in relation to the engineering and construction of some of the first AWD hull blocks. This resulted in the reallocation of block work between BAE, Forgacs and Navantia and amendment of the Alliance Operational Schedule. In response to a subsequent DMO request which included substantially reducing the Forward Estimate budget demand, the smoothing of workforce requirements, the extension of time interval between delivery of LHDs and AWDs to Navy and the fostering of a sustainable Australian naval shipbuilding industry, the AWD Alliance conducted an evaluation of the construction schedule and advised Defence that the AWD schedule should be re-baselined. Following stakeholder review and support for the schedule extension and resource considerations, the then Minister for Defence announced, on 6 September 2012, that the AWD schedule would be re-baselined and that the revised AWD delivery dates would be March 2016, September 2017, and March 2019.					
4	Key Event Dates are under review as part of the AWD Reform activities. Operational Schedule dates have been determined based on the outcomes of the Alliance's Comprehensive Cost Review (CCR) held in February 2015 (slip of 15/12/12 months respective to each Ship Provisional Acceptance recognised by the Industry Participants). The revised dates will be baselined over the June-September period and validated through a tailored Integrated Baseline Review to take place after the rebaseline. The rebaseline and Schedule slippage has yet to be negotiated and the ABTIA amended to reflect the outcomes.					

3.3 Progress Toward Materiel Release and Operational Capability Milestones

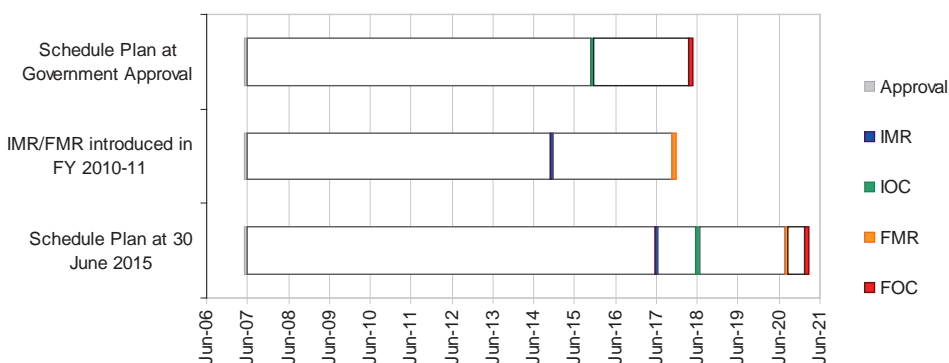
Item	Original Planned	Achieved / Forecast	Variance (Months)	Notes
Initial Materiel Release (IMR)	Dec 14	Jun 17	30	See Note 3 and 4 above
Initial Operational Capability (IOC)	Dec 15	Jun 18	30	See Note 3 and 4 above
Final Materiel Release (FMR)	Dec 17	Sep 20	33	1, 4 above
Final Operational Capability (FOC)	May 18	Mar 21	34	2, 4 above

Notes

1 FMR is scheduled 6 months after Materiel Release 3 (MR3).

2 FOC is scheduled 12 months after MR3.

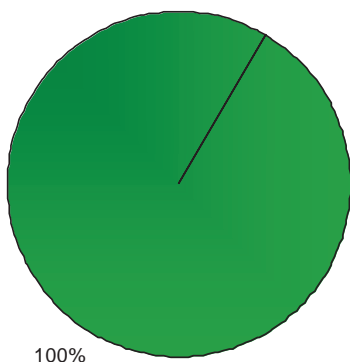
Schedule Status at 30 June 2015



Section 4 – Materiel Capability Delivery Performance

4.1 Measures of Materiel Capability Delivery Performance

Pie Chart: Percentage Breakdown of Materiel Capability Delivery Performance



Green:

The Program currently expects to meet materiel capability requirements as expressed in the suite of Capability Definition Documentation and in accordance with the requirements of the relevant Technical Regulatory Authorities.

Amber:

N/A

Red:

N/A

Note

This Pie Chart does not necessarily represent capability achieved. The capability assessments and forecasts by the program are not subject to the ANAO's assurance review.

4.2 Constitution of Initial Materiel Release and Final Materiel Release

Item	Explanation	Achievement
Initial Materiel Release (IMR)	One Hobart Class Ship System with up to Category 5 (sea acceptance) trials, testing and certification completed. Initial sustainment arrangements in place to support IOC. Training of the <i>Hobart Class Systems</i> for the commissioning crew to support IOC.	Not achieved
Final Materiel Release (FMR)	All three Hobart Class Ship Systems with up to Category 5 (sea acceptance) trials, testing and certification completed. All sustainment arrangements in place to provide materiel support to the <i>Hobart Class</i> .	Not achieved

Section 5 – Major Risks and Issues

5.1 Major Project Risks

Identified Risks (risk identified by standard project risk management processes)	
Description	Remedial Action
<p>1. Integration of the Hobart Class Combat System.</p> <p>Key Risks:</p> <ul style="list-style-type: none"> The current version of the Aegis Weapons System has not been previously integrated in the platform. Integration of Electronic Warfare and Communications Systems. Equipment selections may impact on the topside design. Sonar – the software development and integration. 	<p>The risks associated with the integration of the Aegis Weapons System are being actively managed through regular reviews between the Alliance, Platform System Designer, US Navy and Lockheed Martin (the Aegis equipment supplier to the US Navy). Action is taken to ensure emerging issues are identified and addressed in a timely manner.</p> <p>Electronic Warfare and Communications and Information Systems procurement strategies have been developed with a wide range of stakeholder engagement. These strategies are aimed at ensuring that the customer will be satisfied with the contracted solution and that the solution will have minimal impact on the platform design.</p> <p>Sonar – See Remedial Action at Risk 3.</p>
<p>2. Capability Acceptance: Certification requirements are unclear for some equipment and US Navy and some Original Equipment Manufacturers are not disclosing requested objective quality evidence.</p>	<p>The Project Certification Plan has been agreed with the RAN. The Program is working closely with the US Navy and Original Equipment Manufacturers to obtain the required objective quality evidence. Working with RAN to establish processes, procedures and principles to achieve certification.</p> <p>All Safety certification required under FMS has been delivered to Alliance, no outstanding data.</p>
<p>3. Subcontractor Performance: Subcontractor performance may result in poor quality product, delays or changed requirements.</p>	<p>The performance of some subcontractors has required active management and intervention.</p> <p>Embedding Alliance staff in block subcontractors premises provides management oversight and the ability to address and resolve issues quickly. A capability partnering agreement between ASC and Forgacs has been executed and 6 additional ASC personnel, making a total of 22, joined the Forgacs team on 6 March 2014.</p> <p>Sonar – The Alliance is actively working with the Sonar Original Equipment Manufacturer (OEM) at all levels, including the embedding of Alliance staff on-site to manage risk associated with software</p>

	<p>development and integration.</p> <p>Sonar schedule is on track. Hardware deliveries will be made in time to support Ship build program. Software delivery is in phases (Build 1 delivered July 2014), Build 2 and 3 will be available to support Combat System Light Off and Sea Trials.</p>
<p>4. Support System: current data available to the Alliance and/or the Commonwealth may not be mature enough to achieve an optimised support system (maturity of Life Cycle Cost (LCC) data, loss of project data that supports Through Life Support).</p>	<p>Mitigation strategies are in place to minimise the risk and work is in hand with the Alliance to develop strategies to progressively seek the data required to support the development of an optimised support system. Logistics Information Management System (LIMS) Management plan completed, implementation has begun including prototype data loading. Working with the Alliance to migrate and validate data between systems.</p> <p>Intellectual Property (IP) is no longer considered to be a part of this risk, as the IP contracted requirements are clearly stated. IP remediation is being treated as business as usual between the contracted parties.</p>
<p>5. Design products may not be available in a timely manner or satisfactory form.</p>	<p>Active monitoring of the Alliance's Platform System Designer's (PSD) contract management strategy to ensure its effectiveness, and engaging the Alliance and PSD as required to resolve current and potential issues as required.</p>
<p>6. The PSD contract may not provide the level of support that is required to complete ship construction in a timely and cost effective manner.</p>	<p>Establishment of ongoing design support services including construction design support and local design authority availability in support of Ship construction through to delivery of Ship 3. Extension of PSD services will be required due to a schedule rebaseline and is currently being investigated.</p>
<p>7. Inadequate Configuration Management impact on Ship Acceptance.</p>	<p>Early engagement and agreement on the process and expected deliverables is required to support ship Delivery and Acceptance. The Shipbuilder Certification Plan is in draft with the Alliance and addresses how conformance will be established. The Ship Acceptance Plan is also in development with the Alliance and includes the Functional Configuration Audit and Physical Configuration Audit (FCA/PCA) approach as well as the Compartment Completion Inspection process.</p>
<p>Emergent Risks (risk not previously identified but has emerged during 2014-15)</p>	
<p>Description</p>	<p>Remedial Action</p>
<p>1. Impacts to Test and Activation and Sea Trials due to equipment failure.</p>	<p>Early progressive testing through Verification & Validation phase will mitigate risk if failure experienced. Working with Navantia identifying potential causes early and implementing appropriate contingency plans, OEM support and training, including trials crew training to reduce likelihood of operator errors.</p>

5.2 Major Project Issues

Description	Remedial Action
<p>1. The delivery of FMS elements of the AWD supplies may not be possible, or may be delayed or compromised in integrity, due to the budget for FMS Engineering and Technical Assistance (ETA) not being sufficient.</p>	<p>Working with the US to identify options to reduce cost and provide waterfront support for Ships 2 and 3. A schedule extension as a result of rebaselining may have a cost impact for the provision of FMS ETA, Indigenous support capability and skills transfer from Ship 1 Integrated Test Team (ITT) will enable a reduction in Ship 2 and 3 ITT teams.</p>
<p>2. Indexation: Applying an average, fixed Specialised Military Equipment index to the Program budget may not be sufficient to fund the actual cost increases and liabilities defined in the ABTIA and PSD contracts.</p>	<p>Close monitoring through annual estimates to ensure that the balance of the total project budget remains sufficient to cover any shortfalls. The program is funding actual cost increases with project contingency funds.</p> <p>The true indexation cost will be included in the Real Cost Increase of the AWD Program Budget.</p>
<p>3. Shipbuilding Delay: The AWD Alliance will not meet contracted delivery dates for the three ships.</p> <p>The quality and rework issues in block construction are higher than originally envisaged. As a result of the increasing workloads the schedule is being reviewed and managed by the Alliance. On 26 May 2011 the then Minister for Defence announced the reallocation of construction work for the AWD Project including work at Navantia. In March 2012 the decision was made to maintain the same block construction arrangements for Ship 3 as Ship 2. In December 2013 some block construction work was re-allocated within Australian shipyards in an effort to minimise further delay.</p>	<p>In response to delays in hull block fabrication, the AWD Alliance acted to limit a potential two year schedule slip in the delivery of HMAS Hobart by up to 12 months. Two key actions were an initial reallocation of hull blocks among Australian shipyards in December 2010, followed by a further reallocation of blocks between the Australian shipyards and Navantia in May 2011. The AWD Alliance also took action in 2010 to place more shipbuilding experts from Navantia, Bath Iron Works and Lloyds Register into the three shipyards.</p> <p>In September 2012 the then Minister for Defence announced that the AWD program would be re-baselined, extending the keel-to-keel interval between each ship to 18 months. ABTIA contract has been amended to reflect the re-baselining.</p> <p>Implementation of AWD Reform announced in 2014 will require rebaselining program cost and schedule. The Production Comprehensive Cost Review was held in February 2015 and is the first step towards establishing an achievable but challenging cost and schedule baseline. CCR outcomes have informed the basis of an Operational Budget and Schedule being implemented over the June-September period.</p>
<p>4. Change Management: Change introduced to the existing platform design as a result of:</p> <ul style="list-style-type: none"> • Legislative or regulatory requirements, • Safety requirements, • Equipment obsolescence, • Errors in the original design, and • Interrelated projects (e.g. AIR9000) <p>Will impact cost and possibly schedule. Severity of the cost and schedule impacts to the Commonwealth of Australia will be dependent on the scope and timing of the change implementation relative to Ship completion.</p>	<p>A Design Chill was implemented in 2011 to reduce the level of change rolling into the production baseline.</p> <p>Effective engagement with key stakeholders has been critical to ensure the implications of change requests, approval and subsequent implementation are fully understood.</p> <p>Robust mechanisms to control the authorisation of change have been established within the Alliance and Program Office.</p> <p>The change management approval and implementation process has undergone a number of evolutions to expedite change as efficiently as possible. Delays in approval can result in significant cost and schedule impacts.</p>

<p>5. Productivity of ASC.</p> <p>AWD shipbuilding productivity has been independently reviewed and benchmarked since 2011. The current low level of shipbuilding productivity is considered a major issue in terms of the overall AWD program and to date the issue has only been partially addressed by ASC, the AWD Shipbuilder. Unless there is a near term improvement in shipbuilding productivity then the current shipbuilding performance, which is in excess of plan and budget, will negatively affect other components of the AWD program.</p>	<p>Annual independent reviews have been undertaken by First Marine International (FMI), a company internationally recognised for its expertise in shipbuilding productivity benchmarking. The most recent review was conducted December 2014.</p> <p>While there has been improvement by ASC in some of the areas underpinning the measurement of productivity, there are many areas that have been identified by FMI in current and previous reports that have either not been addressed, only partially addressed, or addressed only recently. These areas were revisited during the FMI review in 2014 and included recommendations for renewed focus.</p> <p>ASC has implemented strategies aimed at productivity improvement, implemented new management structures, and adopted a keen focus on process changes but these strategies have yet to produce any significant positive productivity change.</p> <p>Insertion of additional Shipbuilding expertise from BAE, Navantia and Raytheon commenced in December 2014 for the duration of the interim Reform period. The long term arrangements of Reform are focused on improving management capability and shipyard productivity to positively improve cost and schedule performance.</p>
<p>6. Support Facility availability.</p> <p>Facilities may not be ready when required for transition into in-service support.</p>	<p>Facilities Submission to the Public Works Committee (PWC) occurred in April 2013, followed by an approved expediency motion in May 2013. Construction commenced in July 2013. Interim Facility solutions have been identified to address potential capability gap as a result of the PWC approval delay. Platform Systems training is not affected, however the temporary Combat System training facilities will be established in the Sydney area to minimise disruption to trainers and trainees.</p> <p>This issue has been retired as the temporary Combat System training facility has been established.</p>

Section 6 – Project Maturity

6.1 Project Maturity Score and Benchmark

Maturity Score		Attributes							Total																																		
		Schedule	Cost	Requirement	Technical Understanding	Technical Difficulty	Commercial	Operations and Support																																			
Project Stage	Benchmark	7	7	7	8	7	7	7	50																																		
Detailed Design Review	Project Status	7	7	8	8	8	6	7	51																																		
	Explanation	<ul style="list-style-type: none"> • Requirement: Reflects the successful completion of the Support System Detailed Design Review in August 2010. • Technical Difficulty: Reflects the completion of Communication Information System subsystem CDR. 92 per cent across four specifications of Combat Systems Cat 0 – 3 Test Events have been successfully completed. • Commercial: Reflects the lower than expected contractor performance in terms of ship building productivity. 																																									
<table border="1"> <caption>Project Maturity Score Progress</caption> <thead> <tr> <th>Project Stage</th> <th>Maturity Score</th> </tr> </thead> <tbody> <tr><td>Enter DCP</td><td>13</td></tr> <tr><td>Decide Viable Capability Options</td><td>16</td></tr> <tr><td>1st Pass Approval</td><td>21</td></tr> <tr><td>Industry Proposals / Offers</td><td>30</td></tr> <tr><td>2nd Pass Approval</td><td>35</td></tr> <tr><td>Contract Signature</td><td>42</td></tr> <tr><td>Preliminary Design Review(s)</td><td>45</td></tr> <tr><td>Detailed Design Review(s)</td><td>50</td></tr> <tr><td>Complete Sys. Integ. & Test</td><td>55</td></tr> <tr><td>Complete Acceptance Testing</td><td>57</td></tr> <tr><td>Initial Materiel Release (IMR)</td><td>60</td></tr> <tr><td>Final Materiel Release (FMR)</td><td>63</td></tr> <tr><td>Final Contract Acceptance</td><td>65</td></tr> <tr><td>MAA Closure</td><td>66</td></tr> <tr><td>Acceptance Into Service</td><td>67</td></tr> <tr><td>Project Completion</td><td>70</td></tr> </tbody> </table>										Project Stage	Maturity Score	Enter DCP	13	Decide Viable Capability Options	16	1st Pass Approval	21	Industry Proposals / Offers	30	2nd Pass Approval	35	Contract Signature	42	Preliminary Design Review(s)	45	Detailed Design Review(s)	50	Complete Sys. Integ. & Test	55	Complete Acceptance Testing	57	Initial Materiel Release (IMR)	60	Final Materiel Release (FMR)	63	Final Contract Acceptance	65	MAA Closure	66	Acceptance Into Service	67	Project Completion	70
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Section 7 – Lessons Learned

7.1 Key Lessons Learned

Project Lesson	Categories of Systemic Lessons
Formation of the Alliance, a new organisational structure takes time and effort to develop the culture necessary to achieve improved outcomes. An external facilitator was engaged to assist in the initial and ongoing development of the Alliance and this has proved invaluable.	Governance
The Program Office, originally located in both Canberra and Adelaide was relocated to Adelaide to improve operations and interactions with the Alliance. The relocation involved considerable effort and a resultant loss in knowledge of staff who did not relocate. Earlier consolidation of the Program Office would have been beneficial.	Resourcing
The interpretation of the requirements of fitness for purpose of drawings is different between contracting parties. A review of all product types prior to contract and interrogation of the delivery schedule to confirm sufficient time for reviews and incorporation of comments is necessary.	Contract Management
The shipbuilding capacity of shipyards involved in a project like AWD needs to be assessed in detail in terms of precise capacity to undertake production engineering as well as the workload constraints of facilities, production supervision and overall workforce numbers taking into consideration the total contracts conducted at the shipyard in parallel.	Resourcing First of Type Equipment
The schedule that plans the transition from design to production needs detailed evaluation by the designer(s) and the production shipyard(s) to ensure the balance between commencing production and completing very detailed design is appropriately balanced and agreed.	Schedule Management

Section 8 – Project Line Management

8.1 Project Line Management in 2014-15

Position	Name
General Manager	Mr Colin Thorne (Aug 13–current)
Program Manager	Mr Peter Croser (Acting)
Deputy Program Manager	Mr Greg McPherson (Acting)
Deputy Program Manager General Manager Engineering	Commodore Steve Tiffen, RAN (to Dec 14) Commodore Craig Bourke, RAN (Dec 14–current)